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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/694,077	10/19/2000	Ilya Ravkin	VAI 301B	7890

7590 07/05/2007

Pierre C. Van Rysselberghe
Kolisch Hartwell, P.C.
520 S.W. Yamhill St., Suite 200
Portland, OR 97204

EXAMINER	
EPPERSON, JON D	

ART UNIT	PAPER NUMBER
1639	

MAIL DATE	DELIVERY MODE
07/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/694,077	RAVKIN ET AL.	
	Examiner	Art Unit	
	Jon D. Epperson	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *34 and 36-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *34 and 36-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Request for Continued Examination (RCE)

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/10/07 has been entered. Claims 34 and 36-47 were pending. Applicants amended claims 34, 36-39, 41-43, and 45-46. No claims were added or canceled. Therefore, claims 34 and 36-47 are still pending and examined on the merits.

Those sections of Title 35, US code, not included in the instant action can be found in previous office actions.

Withdrawn Objections/Rejections

2. All rejections are maintained and the arguments are addressed below.

Outstanding Objections and/or Rejections

Claim Rejections - 35 USC § 103

3. Claims 34 and 36-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lam et al. (Lam, K. S.; Salmon, S. E.; Hersh, E. M.; Hruby, V. J.; Kazmierski, W. M.; Knapp, R. J. "A new type of synthetic peptide library for identifying ligand-binding activity" Nature **1991**, 354, 82-84) and Egner et al. (Egner, B. J.; Rana, S.; Smith, H.; Bouloc, N.; Freg, J. G.;

Brocklesby, W. S.; Bradley, M. "Tagging in combinatorial chemistry: the use of coloured and fluorescent beads" Chem. Commun., **1997**, 735-736) and Lee (U.S. Patent No. 4,053,433) (Date of Patent is **1977**) and Blawas et al (Blawas, A.S.; Reicher, W. M. "Protein Patterning" Biomaterials **1998** *19*, 595-609) and Noonan et al (U.S. Patent No. 6,129,896) (Filing Date is **December 17, 1998**) and Walt (U.S. Patent No. 6,210,910) (Filed **March 2, 1998**).

For ***claims 34 and 41***, Lam et al. (see entire document) teach a method for identifying ligand-binding activity using a synthetic 'one-bead, one-peptide' approach (e.g., see abstract), which reads on the claimed invention. For example, Lam et al. disclose providing a first class of carriers in a first reaction vessel and a second class of carriers in a second reaction vessel wherein a first type of analyte is attached to said first class of carriers and a second type of analyte is attached to said second class of carriers (e.g., see page 82, column 1, last paragraph, "The first cycle consisted of distributing a pool of resin beads into separate reaction vessels each with a single amino acid [i.e., different class of analyte]"; see also figure 1, wherein the first class = A, second class = G, etc. and each class is in its own reaction vessel; see also page 82, column 2, paragraph 3 describing formation of pentapeptide library with ~2,476,099 members). Lam et al. also disclose forming a mixture of carriers from the first and second vessels, the mixture having substantially equal numbers of carriers for each vessel (e.g., see figure 1, "randomization" step; see also page 82, column 1, last paragraph, "Our method involves creating a large peptide library ... representing the universe of possible random peptides in roughly equimolar proportion"). Lam et al. further disclose dispersing a portion of the mixture to an examination site on a surface, the carriers of the first and second classes

being distributed to random positions across the examination site (e.g., see figure 2; see also page 82, column 2, paragraph 1). Lam et al. further disclose reacting the portion of the mixture with a test substance such as a labeled antibody against β-endorphin or streptavidin (e.g., see Tables 1 and 2; see also figure 2). Lam et al. also disclose acquiring at least one image of carriers at the examination site on the surface (e.g., see figure 2 showing low- and high-power photomicrographs).

For ***claims 39 and 46***, Lam et al. disclose covalent attachment of pentapeptide sequences (e.g., see figure 1; see also abstract).

For ***claims 40 and 47***, Lam et al. disclose a reaction step that occurs before the dispensing step (e.g., see Lam et al., page 82, column 2, paragraph 1, "Acceptor molecules were ... added in soluble form to the peptide-bead library [i.e., before analysis]"). Also note that optimization of process steps, especially with respect to ordering, is within the routine skill of the art. *In re Burhans*, 154 F.2d 690, 69 USPQ330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results).

Lam et al. differ from the claimed invention as follows:

For ***claims 34 and 42***, Lam et al. fail to teach the use of a first and second optically detectable code to interpret the result of such a binding experiment. In addition, Lam et al. only teach the use instead labels such as alkaline phosphatase coupled with various sequencing techniques to identify pentapeptides that interact with the ligands. In addition, Lam et al. fail to teach at least one flat viewing surface and a shape that self-orients the viewing surface to face a viewing direction substantially perpendicular to the

surface. Lam et al. only teach the use of round beads.

For ***claims 36 and 43***, Lam et al. fail to teach each carrier has at least one transparent portion.

For ***claims 37 and 44***, Lam et al. fail to teach carriers as a combination of fused fibers of various colors, the colors and relative positions of the fibers indicating the code.

For ***claim 38 and 45***, Lam et al. fail to teach the attachment of biological cells to the carriers for cell identification. The combined references of Lam et al. and Egner et al. only teach the use of peptides.

For ***claim 41***, Lam et al. fail to teach the additional steps of acquiring a set of images of carriers at the examination site, each image corresponding to a different spectral band and operating via the use of a computer program to identify carriers of the same class by using the images to develop a mask for the carriers of the same class, and detecting one or more reporting modalities within the mask. The combined references of Lam et al. and Egner et al. only disclose imaging different spectral bands and the use of filter masks (e.g., see Egner et al., figures 1 and 2), but the references is silent as to whether a "computer" program takes advantage of these measurements for identification.

However, the combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. teach the following limitations that are deficient in Lam et al. and Egner et al.:

For ***claims 34 and 42***, the combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. (see entire documents) teach the use of a first and second class of detectable codes to aid in the identification of a library of peptides bound to

beads (e.g., see Egner et al., figures 1 and 4; see also Footnotes disclosing that various dyes can be used to label each "class" of library member, for example, pyrene butanoic acid = Val, methyl red = Ala, etc.). The combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. also teach that the code can exist throughout the entire carrier (e.g., see Egner et al., figure 1 showing color code throughout the entire beads). In addition, the combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. teach that the microcarriers can have generally a flat shape with two substantially parallel planar sides instead of the round shape of a bead (e.g., see Lee, figures 2-5 disclosing examples of a planar "top" and a planar "bottom" side that are substantially parallel and flat; see also lines 37-38 showing that these taggants are useful for producing "libraries" like the libraries disclosed by Lam et al.; see also Noonan et al, figures 3 and 4; see also column 2, lines 23-26; see also column 2, last three paragraphs, "Method 100 begins by synthesizing functional moieties onto a plurality of fibers ... For example, functional moieties may include DNA oligonucleotides for DNA testing biosensor devices. Alternative, the functional moieties may include proteins, peptide, Antibodies"; see also figure 2; see also Blawas et al, pages 605-606, section 4.3, wherein Blawas et al disclose that bound proteins and/or antibodies can be used to control the areas of cell adhesion and/or growth to a substrate surface i.e., the cells bind to the proteins that are attached to the fused glass and/or plastic chips).

For ***claims 36 and 43***, the combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. teach a transparent portion (e.g., see Lee, column 3, lines 60-62, "A list of suitable colors may include: Clear").

For ***claims 37 and 44***, the combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. teach fused colored fibers wherein said fibers represent the code (e.g., see Lee, figures 2-5, see also column abstract, see also column 2, Summary of Invention, wherein the code is detectable on either planar side; see also column 4, lines 49-52, "A preferred type of color-coded microcarrier ... consists of microscopic pieces of colored plastic films fused together to form a rectangular 'microsandwich'"; see also column 4, lines 46-48; see also, column 2, line 46 disclosing 233,846,052 uniquely coded batches of microcarriers; see also see figure 5 disclosing fused fibers).

For ***claims 38 and 45***, the combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. teach the attachment of biological cells to the carriers for cell identification. For example, Noonan et al and Blawas et al teach the use of fused glass and/or plastic fibers can be cut into chips and used as biosensors to attach biological cells (e.g., see Noonan et al, column 2, lines 23-26; see also column 2, last three paragraphs, "Method 100 begins by synthesizing functional moieties onto a plurality of fibers ... For example, functional moieties may include DNA oligonucleotides for DNA testing biosensor devices. Alternative, the functional moieties may include proteins, peptide, Antibodies"; see also Blawas et al, pages 605-606, section 4.3, wherein Blawas et al disclose that bound proteins and/or antibodies can be used to control the areas of cell adhesion and/or growth to a substrate surface i.e., the cells bind to the proteins that are attached to the fused glass and/or plastic chips).

For ***claim 41***, the combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. teach the use of a computerized sensor array for randomly detecting

a mixed population of cells wherein each individual cell in the are is positioned in an optically addressable microwell (e.g., see Walt et al., abstract; see also column 5, lines 57 through column 6, line 20; see also column 7, lines 24-40; see also figures 1 and 3; see also column 12, lines 59-65). Each cell population is individually encoded with a single fluorophores or chromophore or ratios of such dyes like the as was disclosed by Egner et al. (e.g., see Walt et al., column 7, lines 24-40; column 15, lines 15 through column 20, lines 31; column 19, line 66 though column 20, line 11) and the identity and location of each cell type is determined by the characteristic optical response signature of the fluorophores or chromophore dye or ratios of such dyes (e.g., see Walt et al., column 15, lines 25-42; column 16, lines 18-26; column 20, lines 12-31). The type of cell includes adipocyte fat cells, neurons, and fibroblasts. The apparatus for the optical detection of the cells includes instruments such as epifluorescence microscope and CCD camera and the data is processed by a computer using an image processing software (e.g., see Walt et al., column 26, lines 28-55).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to make to use the colored and fluorescently labeled beads as disclosed by Egner et al. to make the peptide library as disclosed by Lam et al. for the purposes of facile high throughput screening because Egner et al. explicitly state that their labeled beads were created for this purpose and further use the embodiments disclosed in the Lam et al. reference as an example (e.g., see Egner et al., page 736, paragraph bridging columns 1-2, "The use of colored and fluorescent beads has the potential, we believe, to simplify the identification of library members for single bead

screening application"; see also page 735, column 1, paragraph 3, wherein the Lam et al. article is explicitly cited in footnote number 2). Furthermore, one of ordinary skill in the art would have been motivated to use the colored and labeled beads as taught by Egner et al. because according to Egner et al. it is a "simple" technique that is "non-destructive" and "very sensitive, with detection levels easily down to femtomoles of material/bead" (e.g., see Egner, et al., page 736, column 1, last paragraph). Furthermore, one of ordinary skill in the art would have reasonably expected to be successful because Egner et al. actually use the method of Lam et al. to synthesize their library (e.g., see Egner et al, page 735, column 1, paragraph 3 wherein the Lam et al. reference is cited for the library preparation in footnote 2).

In addition to the spherical beads disclosed by the combined teachings of Lam et al. and Egner et al. (as set forth above) other shapes and/or carriers (including carriers that have at least one flat viewing surface and a shape that self-orients the viewing surface to face a viewing direction) would also have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made. For example, the combined references of Lee, Blawas et al., Noonan et al., and Walt et al. teach the use of various other carriers that were standard in the art at the time the invention was made including the use of flat fused fibers made of glass and/or plastic that will "self-orient" to place the flat surface in the viewing direction (e.g., see Lee, abstract expressly stating that their taggants can be used to label chemicals; see also figures 2-6; see also column 2, lines 37 and 38 wherein Lee expressly state that these taggants are useful for the production of "libraries", which would encompass the libraries produced by Lam et al.; see also column

1, lines 57 wherein the screening of "proteinaceous" materials is disclosed i.e., like the "proteinaceous" peptide libraries disclosed by Lam et al.; see also Noonan et al., figure 3; see also column 2, lines 60-63 stating that similar fused fibers can be used to "attach" a wide variety of ligands including proteins, antibodies, nucleic acids, etc.). Furthermore, a person of ordinary skill in the art would have been motivated to use the fused fibers as disclosed by the combined reference of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. to replace the spherical carriers as disclosed by the combined teachings of Lam et al. and Egner et al. because Noonan et al., for example, state that these fused fiber carriers are easy to make, cheap to produce and can be monitored using "cleavable linkers" for better "quality control" (e.g., see Noonan et al., column 2, paragraph 1). In addition, Lee, demonstrates that an enormous number of codes can be generated using similar fused fibers (e.g., taggants), which is exactly what is required for labeling combinatorial libraries (e.g., see Lee, column 2, lines 22-23, see also lines 28-45, "The improvement ... comprises providing microcarriers ... [that] are encoded according to, a particular orderly sequence of visually color distinguishable dyed and/or pigmented layers ... For example, using a library of 12 colors in an eight-membered sequence, wherein no color is used adjacent to itself, the number of codes would be determined as follows ... this system includes 233,846,052 possible codes"). Finally, a person of skill in the art would reasonably have been expected to be successful because the combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. disclose that proteins, peptides, nucleic acids, and antibodies can all be easily attached to these carriers just like Lam et al. and Egner et al. demonstrated that peptides could be easily attached to

the spherical beads (see Noonan et al., column 2, second to last paragraph; see also figure 2 showing standard synthesis procedures for connecting peptides, proteins, nucleic acids etc. to the glass, plastic, polymer, etc. solid supports). In addition, both Lee and Noonan et al. disclose the same bundled and/or fused fibers made of glass, plastic and/or polymers (e.g., see Noonan et al., abstract; see also Summary of the Invention disclosing fused and/or bundled fibers; see also claims 16 and 17 disclosing plastic and glass; see also Lee, Example 1 disclosing bundled and/or fused fibers; see also figures 1-6; see also column 4, last two paragraphs; see also column 3, lines 25-40 disclosing plastic and glass). Furthermore, both Lee, like Lam et al., also disclose the use of a microscope to analyze the carriers, which would encompass the microscopic techniques disclosed by the combined references of Egner et al. and Lam et al. (e.g., see Lee, column 1, line 32; see also Summary of the Invention). In addition, both Noonan et al. and Lam et al. indicate that peptides, proteins, antibodies and nucleic acids like RNA can be screened (e.g., compare Noonan et al., column 2, lines 59-61 to Lam et al., page 82, column 2, paragraph 1).

Furthermore, it would also have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use the carriers, including fused glass and/or plastic fibers, as taught by the combined references of Lee, Lam et al., Egner et al. and Noonan et al. (see above), for the purpose of tagging cells because the combined references of Noonan et al., Blawas et al. and Walt et al., for example, explicitly state teach that fused glass fibers can be used for this purpose (e.g., see Noonan et al., abstract, column 2, Summary of the Invention; see also Blawas et al., page 605-606, section 4.3;

see also Background of the invention and Table 1). A person of skill in the art would have been motivated to use the color coded fused glass and/or plastic as biosensors for detecting cells because Noonan et al., for example, explicitly state that the use of bundled fibers are a "preferred embodiment" (e.g., see column 2, paragraph 2, "the bonded fiber"; see also column 2, last two paragraphs, see also column 1, paragraph 2). Furthermore, Blawas et al. disclose that immobilized biomolecules can be beneficially used to monitor cell adhesion and/or growth (e.g., see entire document, especially, section 4.3 and figure 5). In addition, Walt et al. disclose that their sensors offer "distinct advantages" for high throughput screening of combinatorial libraries including the evaluation of hundreds of thousands of candidate compounds and, in addition, is particularly useful for screening cells using single or mixed dyes (e.g., see Walt et al., Summary of Invention). One of ordinary skill in the art would have reasonably expected to be successful because Blawas et al., Noonan et al. and Lee all separately disclose that fused glass and/or plastic can be used to label cells (e.g., see Blawas et al., Table I, Substrate column; see also Noonan et al., column 3, line 1; see also Lee, column 4, line 51). Furthermore, a person of skill in the art would have reasonably expected to be successful using the sensor as disclosed by Walt et al. because Walt et al. teach that both single fluorophoric or chromophoric dye can be used for encoding the cells or, in an alternative embodiment, two or more encoding materials or dyes may be used to encode cell populations and the optical response intensity ratios for the dyes, produced by exposure to excitation light energy, are employed to encode and identify members of the cell population with the array, which would encompass the methods of Egner et al.

Response

4. Applicant's arguments directed to the above 35 U.S.C. § 103(a) rejection were fully considered (and are incorporated in their entirety herein by reference) but were not deemed persuasive for the following reasons.

[1] Applicants argue, "the amendments overcome the outstanding rejections because none of the references of record discloses coded carriers wherein the code exists throughout the structure of the carrier." (e.g., see 4/10/07 Response, page 7).

[1] The Examiner respectfully disagrees. Colored dyes can be found throughout the beads disclosed by Egner et al. (e.g., figure 1), which are used for encoding purposes.

[2] Applicants argue, "the references of record could not be combined to arrive at the instant invention because there would be no motivation to combine the references and no reasonable expectation of success in doing so absent the hindsight provided by the instant specification." (e.g., see 4/10/07 Response, page 7)

[2] In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*,

958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one of ordinary skill in the art would have been motivated to use the colored and labeled beads as taught by Egner et al. because according to Egner et al. it is a "simple" technique that is "non-destructive" and "very sensitive, with detection levels easily down to femtomoles of material/bead" (e.g., see Egner, et al., page 736, column 1, last paragraph). a person of ordinary skill in the art would have been motivated to use the fused fibers as disclosed by the combined reference of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. to replace the spherical carriers as disclosed by the combined teachings of Lam et al. and Egner et al. because Noonan et al., for example, state that these fused fiber carriers are easy to make, cheap to produce and can be monitored using "cleavable linkers" for better "quality control" (e.g., see Noonan et al., column 2, paragraph 1). In addition, Lee, demonstrates that an enormous number of codes can be generated using similar fused fibers (e.g., taggants), which is exactly what is required for labeling combinatorial libraries (e.g., see Lee, column 2, lines 22-23, see also lines 28-45, "The improvement ... comprises providing microcarriers ... [that] are encoded according to, a particular orderly sequence of visually color distinguishable dyed and/or pigmented layers ... For example, using a library of 12 colors in an eight-membered sequence, wherein no color is used adjacent to itself, the number of codes would be determined as follows ... this system includes 233,846,052 possible codes"). A person of skill in the art would also have been motivated to use the color coded fused glass and/or plastic as biosensors for detecting cells because Noonan et al., for example, explicitly state that the use of bundled fibers are a "preferred embodiment" (e.g., see column 2, paragraph 2, "the bonded fiber"; see also

column 2, last two paragraphs, see also column 1, paragraph 2). Furthermore, Blawas et al. disclose that immobilized biomolecules can be beneficially used to monitor cell adhesion and/or growth (e.g., see entire document, especially, section 4.3 and figure 5). In addition, Walt et al. disclose that their sensors offer "distinct advantages" for high throughput screening of combinatorial libraries including the evaluation of hundreds of thousands of candidate compounds and, in addition, is particularly useful for screening cells using single or mixed dyes (e.g., see Walt et al., Summary of Invention).

With regard to the "expectation of success" argument, it is noted that obviousness does not require absolute predictability. *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); In re Clinton, 527 F.2d 1226, 188 USPQ 365 (CCPA 1976). Here, one of ordinary skill in the art would have reasonably expected to be successful because Egner et al. actually use the method of Lam et al. to synthesize their library (e.g., see Egner et al, page 735, column 1, paragraph 3 wherein the Lam et al. reference is cited for the library preparation in footnote 2). a person of skill in the art would reasonably have been expected to be successful because the combined references of Lee, Egner et al., Blawas et al., Noonan et al., and Walt et al. disclose that proteins, peptides, nucleic acids, and antibodies can all be easily attached to these carriers just like Lam et al. and Egner et al. demonstrated that peptides could be easily attached to the spherical beads (see Noonan et al., column 2, second to last paragraph; see also figure 2 showing standard synthesis procedures for connecting peptides, proteins, nucleic acids etc. to the glass, plastic, polymer, etc. solid supports). In addition, both Lee and Noonan et al. disclose the same bundled and/or fused fibers made of glass, plastic and/or polymers (e.g., see Noonan et

al., abstract; see also Summary of the Invention disclosing fused and/or bundled fibers; see also claims 16 and 17 disclosing plastic and glass; see also Lee, Example 1 disclosing bundled and/or fused fibers; see also figures 1-6; see also column 4, last two paragraphs; see also column 3, lines 25-40 disclosing plastic and glass). Furthermore, both Lee, like Lam et al., also disclose the use of a microscope to analyze the carriers, which would encompass the microscopic techniques disclosed by the combined references of Egner et al. and Lam et al. (e.g., see Lee, column 1, line 32; see also Summary of the Invention). In addition, both Noonan et al. and Lam et al. indicate that peptides, proteins, antibodies and nucleic acids like RNA can be screened (e.g., compare Noonan et al., column 2, lines 59-61 to Lam et al., page 82, column 2, paragraph 1).

Accordingly, the 35 U.S.C. § 103(a) rejection cited above is hereby maintained.

New Rejections

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 34 and 36-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. **Claims 34 and 41** recite the limitation "the code" in line 6 of each claim. There is insufficient antecedent basis for this limitation in the claim. For example, it is unclear

whether Applicants are referring to the "optically detectable" code and, if so, which set of carriers must contain said optically detectable code (i.e., the first class, second class, or both). Therefore, claim 34, 41 and all dependent claims are rejected under 35 USC 112, second paragraph.

B. **Claim 38** recites the limitation "the coupling step" in line 1. There is insufficient antecedent basis for this limitation in the claim. Therefore, claim 38 and all dependent claims are rejected under 35 USC 112, second paragraph.

C. **Claim 41** recites the limitation "the image device" in line 14. There is insufficient antecedent basis for this limitation in the claim. The examiner recommends the "imaging" device as a replacement. Therefore, claim 41 and all dependent claims are rejected under 35 USC 112, second paragraph.

D. **Claim 47** recites the limitation "the reacting step" in line 1. There is insufficient antecedent basis for this limitation in the claim. Therefore, claim 47 and all dependent claims are rejected under 35 USC 112, second paragraph.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon D Epperson whose telephone number is (571) 272-0808. The examiner can normally be reached Monday-Friday from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James (Doug) Schultz can be reached on (571) 272-0763. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jon D. Epperson, Ph.D.
July 18, 2007

JON EPPERSON
PRIMARY EXAMINER